

CONTRIBUTION TO A COLLECTIVE BEHAVIOR IN TEAM SPORT

Exploratory Study of Informational Resources

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CONTEXT

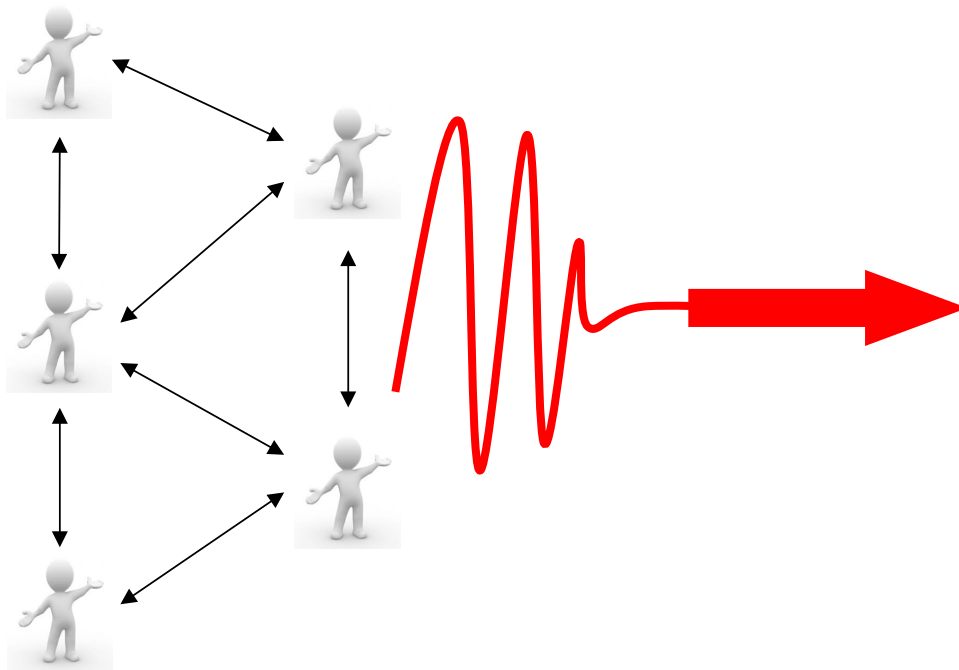
FRAMEWORK

STATE OF ART

Player

Emergence

Team



HOW DO **PARTICIPANTS** MAKE TO REGULATE THEIR ONGOING ACTIVITY TO **CONTRIBUTE** TO THE **COLLECTIVE COMPLEX BEHAVIOR**?

CONTEXT

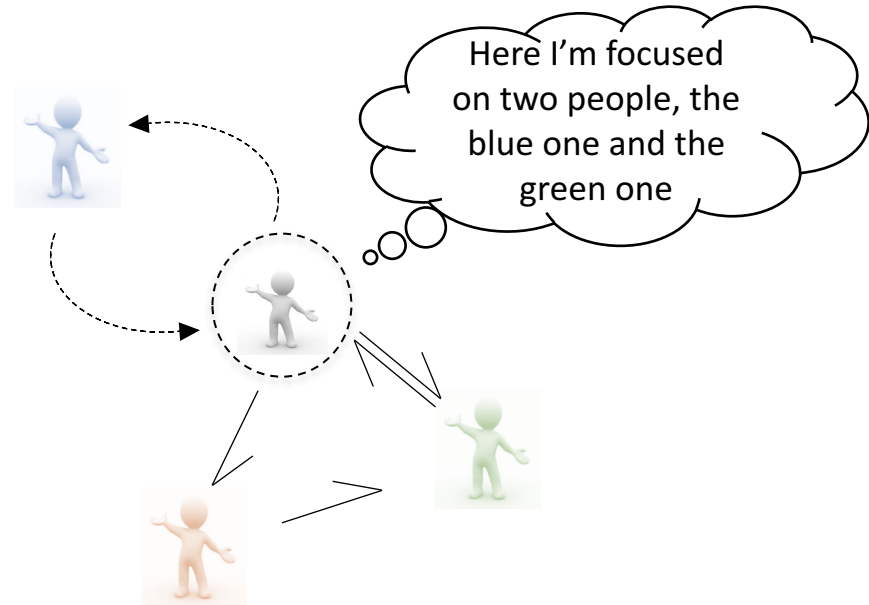
FRAMEWORK

STATE OF ART

ENACTIVE APPROACH

(Varela et al., 1993)

(Araujo & Bourboursson, 2016)



UNDERSTAND HOW A **HUMAN REGULATE** HIS BEHAVIOR IS ASSOCIATED TO THE
DESCRIPTION OF CONSCIOUSNESS (SELF)

CONTEXT

FRAMEWORK

STATE OF ART



WHAT DO WE KNOW ABOUT THE REGULATION?



THEORETICALLY PRESUPPOSED RATHER THAN EMPIRICALLY INVESTIGATED

RATIONAL

METHOD

RESULTS

DISCUSSION

The study aims on analyzing the individual informational resources (i.e., regulation) which contribute to a collective behavior in team sports

OBJECTIVES:

- Identify the variety of the informational resources of human individual activity when they contribute to a collective behavior
- Identify to which extent informational resources are used by the team members



RATIONAL

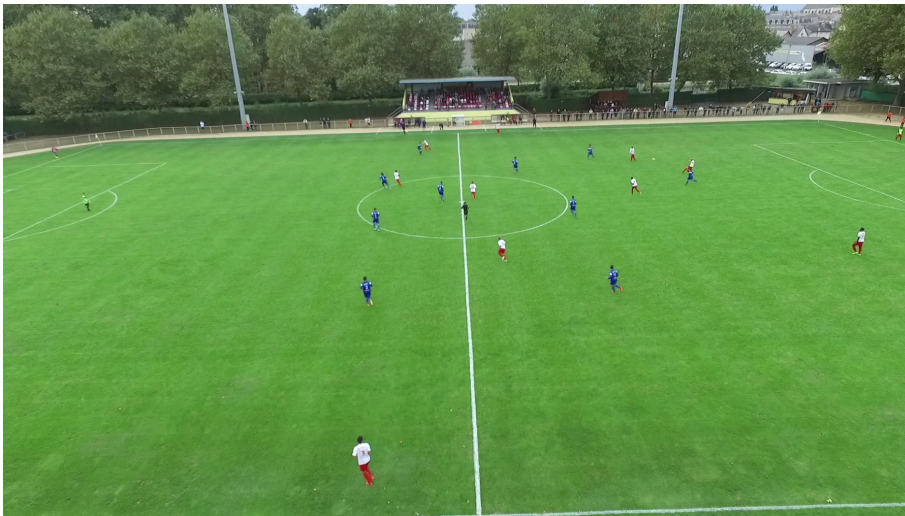
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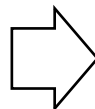
Data Collect

✓ 10 participants: national 5th french football

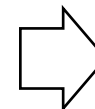


Data treatment

Meaningful
Unit

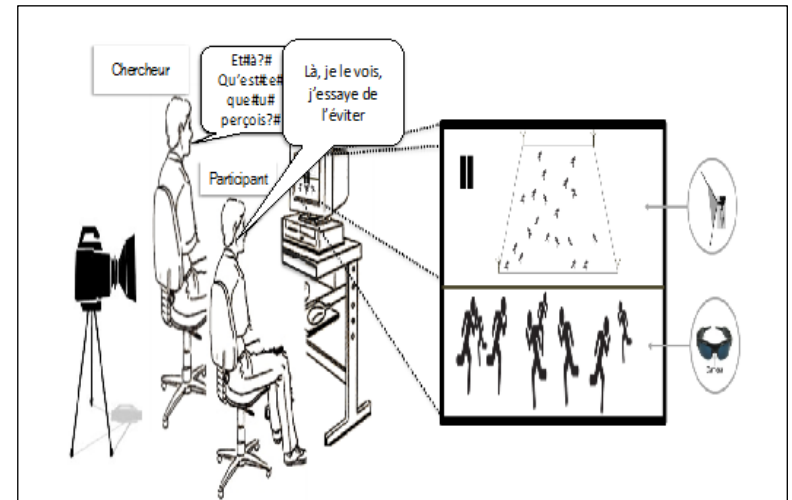


Infomational
Resources



Thematic
Analysis

Self-confrontation interviews



RESEARCH METHODS RESULTS DISCUSSION

Focusing on the trajectory and movement of the ball

Focusing on the player behaviors around the ball

Perception of global spatio-temporal state of the team

Perception of the a small collective unit (e.g., attack, defense)

Perception of a free area that afford a possibility of action

Perception of situation that reveal an high density of player in a area

Judgement on the configuration of the instantaneous power balance between the two teams

Perception of global spatio-temporal state of the team (n = 27)

Perception of the a small collective unit (e.g., attack, defense) (n = 46)

Perception of a free area that afford a possibility of action (n = 23)

Perception of situation that reveal an high density of player in a area (n = 3)

Judgement on the configuration of the instantaneous power balance between the two teams (n = 9)

Perception of a spatiotemporal behaviour of a player unit (n = 73)

Perception of the space by one of the two teams (n = 35)

Informational resource relying on the global shape

(n= 108)

N=622 (info

- 19 differ
- 12 second-order themes
- 6 third-order themes

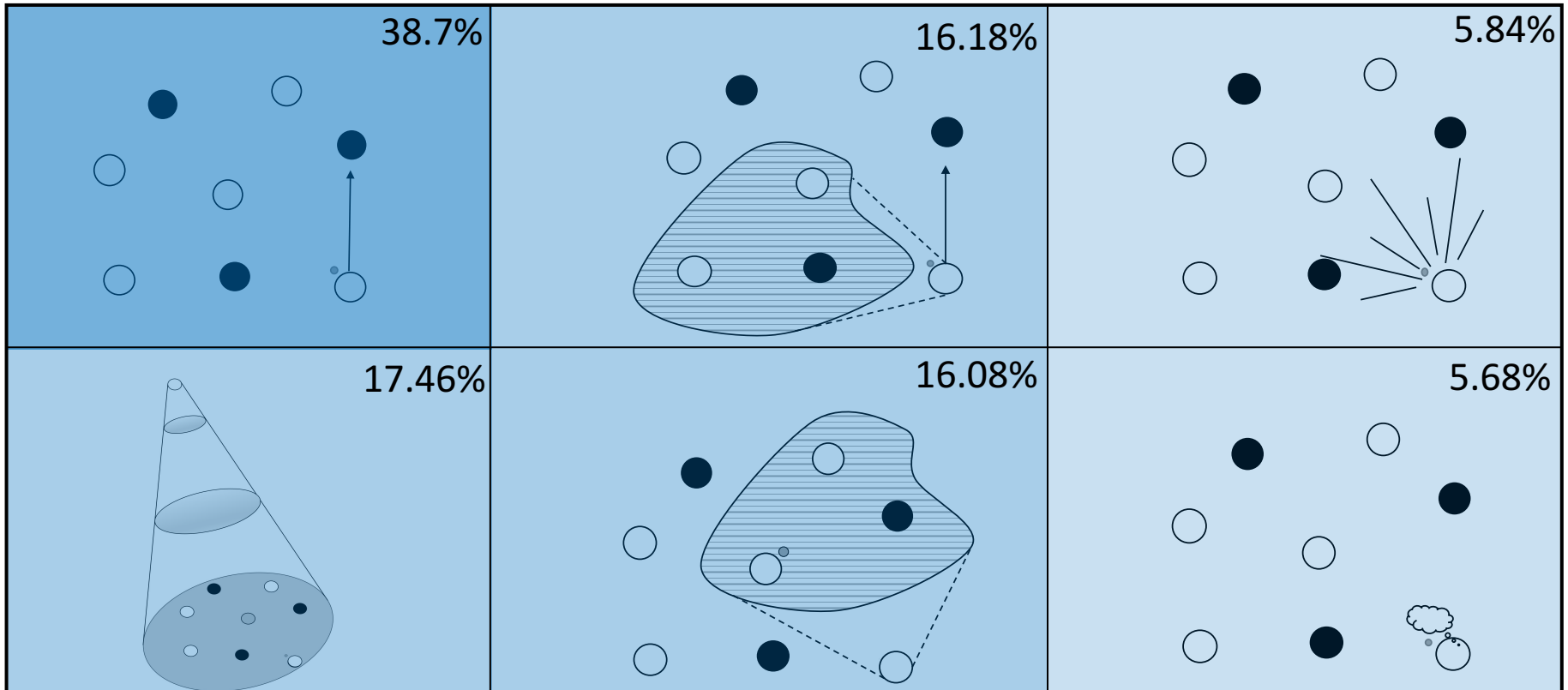
RATIONAL

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- Informational resource relying on different proportion..



RATIONAL

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1- INFORMATIONAL RESOURCES SUPPORTING THE PLAYER'S ACTIVITIES...ALREADY WELL KNOWN

Local
regulation

Collective behaviour
emerge from simple
local adjustment and
interaction

(Perna et al., 2010)

Shared
Knowledge

The collective behavior
improve when the
players shared
knowledge about the
team and the task

(Blickensderfer et al., 2010)



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2- INFORMATIONAL RESOURCES ILLUSTRATING A NEW WAY OF EMERGENCE



Extrapersonal
Coordination

Individual coordinate
their behavior from the
physical environment

Global
regulation

Interpersonal
coordination has
neglected that co-agents
are able to grasp the
global picture

(R'kiouak et al., 2016)

(Bourbousson & Bourbousson, 2016)

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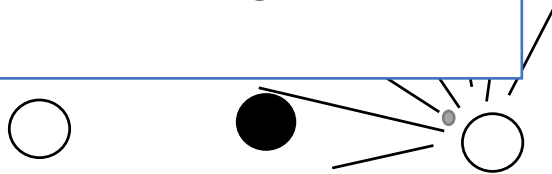
3- OTHER INFORMATIONAL RESOURCES ILLUSTRATING THE HUMAN COMPLEXITY



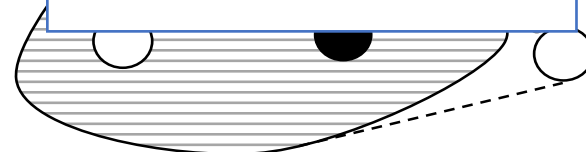
Radar

Simultaneous
perception

Special human ability to
have an overall
perception of the close
surrounding behaviour



Complexity of the
human behavior...not
only one affordance



- Coaching:
 - ✓ New knowledge about the individual regulation
 - ✓ Idea about how to create collective behavior



- Robotics:
 - ✓ Multi-agent system



Thanks for
your
Attention

- Futur research:
What are the spatiotemporal conditions that can explain why people tend to use different informational resources and switch to a specific one ?

